



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,999	09/20/2003	Hans-Georg Treusch	Treusch 4-1	6662
7590	07/20/2005		EXAMINER	
Howard R. Popper 4436 E. Camelback Rd. Phoenix, AZ 85018			NGUYEN, PHILLIP	
			ART UNIT	PAPER NUMBER
			2828	

DATE MAILED: 07/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/666,999	TREUSCH ET AL. 
	<b>Examiner</b>	<b>Art Unit</b>
	Phillip Nguyen	2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is **FINAL**.                                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-6 is/are rejected.
- 7) Claim(s) 7 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 9/19/03
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_.

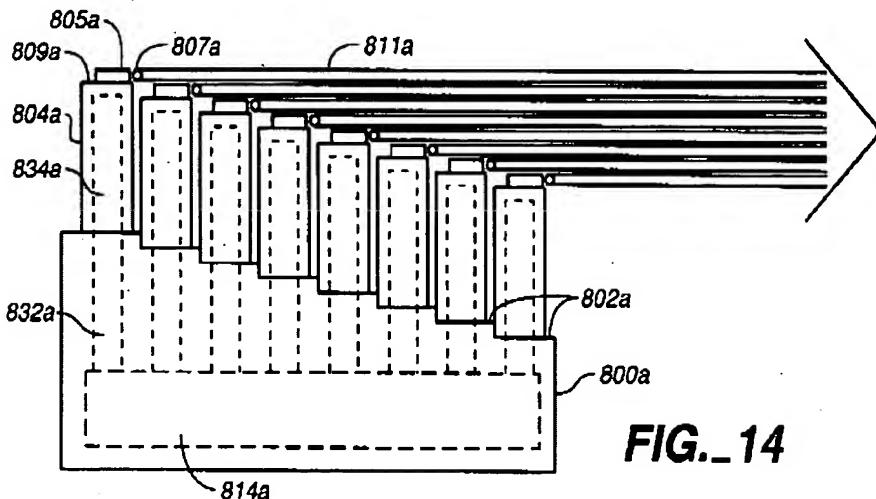
## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.



**FIG. 14**

Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Lang et al. ('116).

With respect to claim 1, Lang discloses in Fig. 13-15 a manifold for supplying a stack of metallic, microchannel heat sinks 804a each mounting a laser diode bar 805a with coolant fluid, said heat sinks forming part of series-connected electrical path, comprising: an insulating body 800a having a plurality of offset parallel planes 809a for mounting a respective plurality of said microchannel heat sinks; said planes terminating coolant channels 834a in fluid communication

with corresponding channels in said heat sinks; said coolant channels communicating with adjacent ones of said heat sinks being separated from each other by at least the width of one of said heat sinks to increase the electrical resistance of said fluid path between adjacent ones of said heat sinks.

With respect to claim 2, Lang discloses said parallel planes are minimally offset from each other so as to concentrate the optical power emitted by said laser diode bars (col. 9, lines 48-53).

With respect to claim 3, Lang discloses in Fig. 13-15 a series-connected stack of metallic, fluid-cooled microchannel heat sinks 804 each bearing a respective laser diode bar 805a for emitting optical power, an insulating body 800a having a plurality of horizontally offset parallel surfaces 802a for mounting a respective one of said heat sinks; said surfaces having coolant channels in fluid communication with corresponding channels in said heat sinks; said coolant channels communicating with adjacent ones of said heat sinks being separated from each other by at least the width of one of said heat sinks to increase the electrical resistance of said fluid path between adjacent ones of said heat sinks; and a plurality of optical reflective surfaces 807a for deflecting the optical power emitted by said laser bars into a plurality of vertically stacked beams.

With respect to claims 4-5, Lang discloses in Fig. 13-15 an assembly for providing a concentrated, vertically stacked array of laser beams from a horizontally offset array of electrically serially-connected metallic microchannel heat sinks 804a each bearing a laser diode bar 805a, comprising: a coolant channel 834a bearing manifold having horizontally offset planes 802a each mounting a respective one of said heat sinks; the coolant channels serving adjacent

ones of said heat sinks being separated from one another to increase the electrical resistance of the fluid path between adjacent ones of said heat sinks; and a series of stepped optical deflectors 807a for re-arranging the laser beams emitted from the laser diode bars into vertical stack.

With respect to claim 6, Lang discloses the coolant is water.

*Allowable Subject Matter*

2. Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

*Citation of Pertinent References*

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The patent to Lang et al. discloses Laser Diode Array Assemblies with Optimized Brightness Conservation, U.S. Patent No. 6240116

***Communication Information***

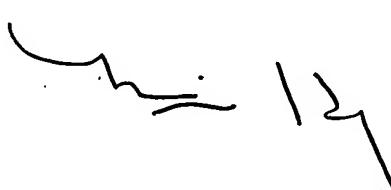
4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phillip Nguyen whose telephone number is 571-272-1947. The examiner can normally be reached on 9:00 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MINSUN HARVEY, can be reached on 571-272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

pn

AU 2828

  
**MINSUN OH HARVEY**  
**PRIMARY EXAMINER**